

Notes for Marking Level G Worksheets

- The equivalent answers should be marked correct even when the form of the answers are different from the one in the Answer Book in the following cases. Pay attention not to demotivate students by marking a correct answer wrong.

Types of equivalent answers	Examples of alternative answers
Order of algebraic expressions and numbers	$x + 5 \leftrightarrow 5 + x$ $a - b \leftrightarrow -b + a$ $3x + y + 1 \leftrightarrow y + 3x + 1$
How to write fractions	$\frac{1}{3}x \leftrightarrow \frac{x}{3} \qquad \frac{2}{5}x \leftrightarrow \frac{2x}{5}$ $\frac{5x - 1}{15} \leftrightarrow \frac{1}{3}x - \frac{1}{15}$
Signs	$\frac{-x + 9}{12} \leftrightarrow -\frac{x - 9}{12}$

- From G | 35, encourage students to write their answers in alphabetical order (a, b, c or x, y, z) and in order of decreasing degree of the specific value (x^2, x).

- Alternative answers are given for the problems to be careful of.

Example : G | 57 (2)

(2)

$$\frac{-18x + 13}{24}$$

Alternative Answer

$$\left[-\frac{18x - 13}{24} \right]$$

G1-5 (3-5 min)

1		2	
1.			
(1) $4\frac{3}{7}$	(7) 4	(1) $\frac{1}{2}$	(8) $\frac{2}{3}$
(2) $10\frac{1}{2}$	(8) $3\frac{5}{12}$	(2) $\frac{3}{4}$	(9) $\frac{1}{2}$
(3) 14	(9) $3\frac{13}{24}$	(3) $\frac{1}{4}$	(10) $\frac{1}{3}$
(4) $5\frac{3}{8}$	(10) $10\frac{7}{10}$	(4) $\frac{3}{8}$	(11) $\frac{1}{2}$
(5) $12\frac{1}{8}$	(11) $4\frac{7}{24}$	(5) $\frac{3}{4}$	(12) $\frac{2}{3}$
(6) $6\frac{3}{10}$	(12) $4\frac{13}{25}$	(6) $\frac{3}{4}$	(13) $\frac{1}{2}$
		(7) $\frac{2}{5}$	(14) $\frac{1}{4}$
1		2	
2.			
(1) $\frac{13}{4}$	(6) $\frac{55}{16}$	(15) $\frac{1}{2}$	(22) $\frac{1}{5}$
(2) $\frac{75}{8}$	(7) $\frac{103}{14}$	(16) $\frac{2}{3}$	(23) $\frac{1}{2}$
(3) $\frac{35}{6}$	(8) $\frac{124}{15}$	(17) $\frac{1}{2}$	(24) $\frac{1}{3}$
(4) $\frac{60}{7}$	(9) $\frac{127}{12}$	(18) $\frac{1}{3}$	(25) $\frac{1}{2}$
(5) $\frac{85}{13}$	(10) $\frac{369}{20}$	(19) $\frac{2}{3}$	(26) $\frac{3}{4}$
		(20) $\frac{1}{3}$	(27) $\frac{1}{4}$
		(21) $\frac{3}{4}$	(28) $\frac{3}{4}$

3				4				5			
(1)	$\frac{1}{2}$	(8)	$\frac{2}{5}$	(1)	$\frac{6}{7}$	(8)	$\frac{1}{3}$	(1)	$\frac{5}{24}$		
(2)	$\frac{1}{2}$	(9)	$\frac{5}{6}$	(2)	$\frac{2}{3}$	(9)	$\frac{1}{3}$	(2)	$\frac{7}{16}$		
(3)	$\frac{1}{3}$	(10)	$\frac{2}{3}$	(3)	$\frac{1}{2}$	(10)	$\frac{2}{3}$	(3)	$\frac{29}{48}$		
(4)	$\frac{2}{3}$	(11)	$\frac{2}{5}$	(4)	$\frac{1}{2}$	(11)	$\frac{3}{4}$	(4)	$\frac{7}{15}$		
(5)	$\frac{1}{4}$	(12)	$\frac{1}{3}$	(5)	$\frac{2}{3}$	(12)	$\frac{1}{3}$	(5)	$\frac{7}{10}$		
(6)	$\frac{2}{5}$	(13)	$\frac{1}{3}$	(6)	$\frac{2}{3}$	(13)	$\frac{1}{12}$	(6)	$\frac{5}{6}$		
(7)	$\frac{4}{5}$	(14)	$\frac{1}{3}$	(7)	$\frac{1}{2}$	(14)	$\frac{2}{5}$	(7)	$\frac{23}{30}$		
3				4				5			
(15)	$\frac{1}{2}$	(22)	$\frac{2}{5}$	(15)	$\frac{2}{3}$	(22)	$\frac{4}{7}$	(8)	$6\frac{5}{12}$		
(16)	$\frac{1}{4}$	(23)	$\frac{2}{3}$	(16)	$\frac{1}{6}$	(23)	$\frac{1}{2}$	(9)	$9\frac{1}{18}$		
(17)	$\frac{2}{3}$	(24)	$\frac{1}{3}$	(17)	$\frac{1}{6}$	(24)	$\frac{1}{5}$	(10)	$5\frac{1}{6}$		
(18)	$\frac{2}{3}$	(25)	$\frac{2}{3}$	(18)	$\frac{2}{3}$	(25)	$\frac{2}{5}$	(11)	$6\frac{3}{5}$		
(19)	$\frac{3}{4}$	(26)	$\frac{1}{3}$	(19)	$\frac{1}{3}$	(26)	$\frac{1}{3}$	(12)	$4\frac{10}{21}$		
(20)	$\frac{1}{4}$	(27)	$\frac{2}{3}$	(20)	$\frac{1}{5}$	(27)	$\frac{1}{3}$	(13)	$4\frac{10}{11}$		
(21)	$\frac{1}{3}$	(28)	$\frac{4}{5}$	(21)	$\frac{2}{5}$	(28)	$\frac{2}{3}$	(14)	$6\frac{33}{100}$		

G6-10 (3-5 min)

6	7	8
(1) $\frac{1}{6}$	(1) $\frac{2}{3}$	(1) $\frac{17}{20}$
(2) $\frac{7}{12}$	(2) $\frac{13}{15}$	(2) $2\frac{53}{63}$
(3) $\frac{1}{4}$	(3) $5\frac{3}{4}$	(3) $4\frac{7}{48}$
(4) $4\frac{1}{6}$	(4) $2\frac{5}{6}$	(4) $2\frac{3}{20}$
(5) $2\frac{11}{24}$	(5) $5\frac{7}{24}$	(5) $5\frac{25}{36}$
(6) $3\frac{5}{18}$	(6) $3\frac{2}{15}$	(6) $1\frac{33}{35}$
(7) $2\frac{1}{36}$	(7) $2\frac{2}{15}$	(7) $4\frac{4}{45}$
6	7	8
(8) $3\frac{5}{6}$	(8) $3\frac{3}{5}$	(8) $1\frac{5}{12}$
(9) $1\frac{17}{30}$	(9) $5\frac{5}{8}$	(9) $3\frac{11}{12}$
(10) $1\frac{11}{12}$	(10) $4\frac{5}{8}$	(10) $1\frac{7}{60}$
(11) $2\frac{7}{8}$	(11) $7\frac{4}{9}$	(11) $1\frac{2}{3}$
(12) $5\frac{5}{6}$	(12) $\frac{2}{5}$	(12) $1\frac{71}{75}$
(13) $1\frac{4}{15}$	(13) $5\frac{13}{18}$	(13) $2\frac{2}{45}$
(14) $1\frac{2}{3}$	(14) $\frac{35}{36}$	(14) $1\frac{31}{72}$

9		10	
(1)	$\frac{2}{3}$	(1)	$2\frac{3}{4}$
(2)	$1\frac{1}{2}$	(2)	$\frac{7}{12}$
(3)	$2\frac{1}{2}$	(3)	$1\frac{1}{8}$
(4)	$\frac{4}{5}$	(4)	$\frac{2}{3}$
(5)	$1\frac{1}{5}$	(5)	$\frac{3}{8}$
(6)	2	(6)	$\frac{2}{3}$
(7)	2	(7)	$\frac{2}{3}$
(8)	2	(8)	$\frac{3}{4}$
9		10	
(9)	1	(9)	$1\frac{4}{5}$
(10)	2	(10)	2
(11)	10	(11)	$\frac{4}{5}$
(12)	6	(12)	$2\frac{4}{5}$
(13)	$1\frac{1}{2}$	(13)	$1\frac{7}{10}$
(14)	$7\frac{1}{2}$	(14)	$\frac{3}{8}$
(15)	4	(15)	$2\frac{2}{3}$
(16)	28	(16)	5

G11-15 (3-5 min)

11		12		13	
1.					
(1)	$\frac{3}{10}$	(6)	$\frac{3}{4}$	(1)	1
(2)	$\frac{1}{2}$	(7)	$\frac{21}{25}$	(2)	$1\frac{2}{3}$
(3)	$\frac{4}{5}$	(8)	$\frac{1}{8}$	(3)	1
(4)	$\frac{2}{25}$	(9)	$\frac{3}{8}$	(4)	$11\frac{2}{3}$
(5)	$\frac{1}{4}$	(10)	$1\frac{5}{8}$	(5)	$5\frac{5}{9}$
11		12		13	
2.					
(1)	$\frac{19}{20}$	(8)	$11\frac{16}{21}$	(6)	$\frac{18}{25}$
(2)	$\frac{17}{24}$	(9)	$10\frac{31}{36}$	(7)	$\frac{15}{16}$
(3)	$3\frac{3}{5}$	(10)	$5\frac{3}{80}$	(8)	$\frac{9}{20}$
(4)	$\frac{4}{5}$	(11)	$\frac{1}{3}$	(9)	$\frac{7}{9}$
(5)	$\frac{2}{5}$	(12)	88	(10)	8
(6)	2	(13)	$\frac{5}{21}$		
(7)	$1\frac{1}{2}$	(14)	$\frac{1}{10}$		

14	15
(1) $1\frac{7}{24}$	(1) $5\frac{11}{24}$
(2) $1\frac{17}{24}$	(2) $\frac{1}{8}$
(3) $\frac{83}{90}$	(3) $3\frac{1}{24}$
(4) $1\frac{19}{24}$	(4) $3\frac{17}{40}$
(5) $1\frac{17}{60}$	(5) $\frac{5}{8}$
14	15
(6) $\frac{9}{40}$	(6) $9\frac{11}{24}$
(7) $\frac{29}{70}$	(7) $3\frac{11}{18}$
(8) $\frac{23}{90}$	(8) $2\frac{13}{24}$
(9) $8\frac{13}{84}$	(9) $1\frac{5}{12}$
(10) $7\frac{11}{24}$	(10) $1\frac{19}{24}$

G16-20 (3-5 min)

16	17	18
(1) $\frac{5}{24}$	(1) $\frac{2}{9}$	(1) 2
(2) $\frac{3}{20}$	(2) $\frac{1}{2}$	(2) $\frac{2}{3}$
(3) 6	(3) $\frac{2}{3}$	(3) 1
(4) 6	(4) $4\frac{2}{11}$	(4) $\frac{2}{3}$
(5) $\frac{3}{4}$	(5) $\frac{7}{16}$	(5) $\frac{3}{5}$
(6) $\frac{3}{4}$	(6) $\frac{6}{7}$	
(7) $\frac{1}{12}$	(7) 3	
(8) $\frac{1}{12}$		
16	17	18
(9) $\frac{3}{4}$	(8) 0	(6) $1\frac{2}{3}$
(10) $\frac{1}{8}$	(9) $1\frac{4}{7}$	(7) $4\frac{1}{3}$
(11) $\frac{8}{9}$	(10) $\frac{5}{18}$	(8) $\frac{1}{2}$
(12) $1\frac{2}{3}$	(11) $\frac{2}{3}$	(9) $1\frac{1}{10}$
(13) 2	(12) $\frac{1}{3}$	(10) $\frac{7}{16}$
(14) 2	(13) $3\frac{1}{2}$	
(15) $\frac{7}{40}$	(14) $5\frac{1}{6}$	
(16) $\frac{1}{8}$		

19	20
(1) $\frac{3}{4}$	(1) $\frac{4}{9}$
(2) $1\frac{1}{10}$	(2) $1\frac{3}{7}$
(3) $1\frac{3}{4}$	(3) $\frac{9}{10}$
(4) $\frac{1}{2}$	(4) $\frac{7}{30}$
19	20
(5) $\frac{3}{14}$	(5) $1\frac{1}{2}$
(6) $\frac{11}{20}$	(6) $\frac{1}{4}$
(7) $1\frac{1}{2}$	(7) 3
(8) $1\frac{1}{6}$	(8) $\frac{21}{26}$

G21-25 (2-4 min)

[In G21, the answers should be marked correct even when the '+' sign is omitted.]

21				22			
Ex.				Ex.			
(1)	+ 2	(7)	+ 2	(1)	3	(9)	2
(2)	- 2	(8)	- 2	(2)	- 3	(10)	- 2
(3)	+ 1	(9)	+ 3	(3)	- 3	(11)	2
(4)	- 1	(10)	- 4	(4)	3	(12)	- 2
(5)	+ 4	(11)	0	(5)	4	(13)	- 6
(6)	- 4	(12)	0	(6)	- 4	(14)	- 6
				(7)	- 4	(15)	6
				(8)	4	(16)	6
21				22			
Ex.							
(13)	- 2	(21)	+ 3	(17)	- 2	(25)	5
(14)	+ 2	(22)	- 4	(18)	2	(26)	5
(15)	- 1	(23)	+ 2	(19)	6	(27)	- 2
(16)	+ 1	(24)	+ 5	(20)	- 6	(28)	- 2
(17)	- 2	(25)	- 2	(21)	- 4	(29)	3
(18)	+ 2	(26)	0	(22)	4	(30)	- 3
(19)	+ 4	(27)	- 4	(23)	7	(31)	- 8
(20)	- 4	(28)	- 8	(24)	- 7	(32)	8

23				24				25			
				Ex.				Ex.			
(1)	5	(9)	- 2	(1)	5	(9)	9	(1)	3	(9)	- 2
(2)	- 3	(10)	5	(2)	- 5	(10)	- 9	(2)	- 3	(10)	2
(3)	1	(11)	6	(3)	6	(11)	12	(3)	- 3	(11)	10
(4)	- 4	(12)	- 3	(4)	- 6	(12)	- 12	(4)	3	(12)	- 5
(5)	- 7	(13)	- 4	(5)	6	(13)	16	(5)	9	(13)	0
(6)	- 4	(14)	- 7	(6)	- 6	(14)	- 12	(6)	- 9	(14)	3
(7)	- 5	(15)	- 9	(7)	7	(15)	- 19	(7)	7	(15)	1
(8)	0	(16)	- 5	(8)	- 8	(16)	- 25	(8)	- 7	(16)	- 40
23				24				25			
Ex.											
(17)	4	(25)	12	(17)	5	(26)	- 2	(17)	- 2	(26)	21
(18)	<input type="text" value="- 4"/>	(26)	- 12	(18)	- 5	(27)	- 4	(18)	2	(27)	5
(19)	7	(27)	13	(19)	- 3	(28)	4	(19)	- 2	(28)	- 5
(20)	- 7	(28)	- 13	(20)	13	(29)	8	(20)	- 12	(29)	- 21
(21)	8	(29)	- 14	(21)	6	(30)	- 4	(21)	- 5	(30)	- 18
(22)	- 8	(30)	12	(22)	- 12	(31)	4	(22)	5	(31)	- 28
(23)	10	(31)	- 16	(23)	- 3	(32)	- 8	(23)	- 17	(32)	- 10
(24)	- 10	(32)	18	(24)	- 17	(33)	0	(24)	17	(33)	- 10
				(25)	8	(34)	- 6	(25)	0	(34)	- 28

G26-30 (2-4 min)

26				27			
				Ex.			
(1)	− 3	(9)	20	(1)	− 1	$− \frac{1}{7}$	
(2)	− 1	(10)	12	(2)	1	$\frac{1}{7}$	
(3)	− 8	(11)	5	(3)	1	$\frac{1}{7}$	
(4)	5	(12)	− 22	(4)	− 1	$− \frac{1}{7}$	
(5)	11	(13)	− 8	(5)	5	$\frac{5}{7}$	
(6)	− 2	(14)	− 5	(6)	− 5	$− \frac{5}{7}$	
(7)	− 15	(15)	9	(7)	− 3	$− \frac{3}{7}$	
(8)	8	(16)	3				
26				27			
(17)	− 4	(26)	− 10	(8)	− 5	(17)	$− \frac{5}{7}$
(18)	− 4	(27)	− 7	(9)	5	(18)	$\frac{5}{7}$
(19)	− 12	(28)	8	(10)	5	(19)	$\frac{5}{7}$
(20)	2	(29)	− 3	(11)	7	(20)	1
(21)	7	(30)	21	(12)	− 7	(21)	− 1
(22)	7	(31)	13	(13)	− 5	(22)	$− \frac{5}{7}$
(23)	2	(32)	2	(14)	6	(23)	$\frac{2}{3}$
(24)	− 15	(33)	− 31	(15)	− 6	(24)	$− \frac{2}{3}$
(25)	− 14	(34)	0	(16)	− 5	(25)	$− \frac{5}{9}$

28		29		30	
(1) $\frac{1}{5}$	(9) $-\frac{1}{7}$	Ex. (1) $-\frac{2}{5}$	$-1\frac{2}{5}$	(1) $1\frac{4}{9}$	(6) $-2\frac{4}{9}$
(2) $-\frac{1}{5}$	(10) $\frac{1}{7}$	(2) $\frac{2}{5}$	$1\frac{2}{5}$	(2) $1\frac{4}{9}$	(7) $-3\frac{4}{9}$
(3) $\frac{3}{5}$	(11) $\frac{3}{7}$	(3) $\frac{2}{5}$	$2\frac{2}{5}$	(3) $-2\frac{4}{9}$	(8) $2\frac{2}{11}$
(4) $\frac{1}{5}$	(12) $-\frac{1}{7}$	(4) $-\frac{2}{5}$	$-2\frac{2}{5}$	(4) $-2\frac{4}{9}$	(9) $3\frac{2}{11}$
(5) $-\frac{1}{5}$	(13) $\frac{1}{7}$	(5) $\frac{4}{5}$	$3\frac{4}{5}$	(5) $3\frac{2}{3}$	(10) $-8\frac{7}{11}$
(6) $-\frac{3}{5}$	(14) $-\frac{3}{7}$	(6) $-\frac{4}{5}$	$-3\frac{4}{5}$		
(7) 0	(15) $-\frac{5}{7}$	(7) $-\frac{3}{5}$	$-4\frac{3}{5}$		
(8) 0	(16) $-1\frac{1}{7}$				
28		29		30	
(17) $-\frac{1}{3}$	(26) $-\frac{2}{7}$	(8) $-1\frac{2}{7}$	(13) -4	(11) $3\frac{4}{9}$	(16) 2
(18) $\frac{1}{3}$	(27) $\frac{2}{7}$				
(19) $-\frac{2}{5}$	(28) $\frac{2}{7}$	(9) $1\frac{2}{7}$	(14) $4\frac{5}{9}$	(12) $-2\frac{2}{9}$	(17) $-2\frac{2}{11}$
(20) $\frac{2}{5}$	(29) $-\frac{2}{7}$				
(21) $\frac{1}{3}$	(30) $-\frac{4}{7}$	(10) $2\frac{2}{7}$	(15) $-4\frac{5}{9}$	(13) $2\frac{1}{3}$	(18) $-8\frac{8}{11}$
(22) $-\frac{1}{3}$	(31) $\frac{4}{7}$				
(23) $\frac{2}{5}$	(32) $-\frac{2}{7}$	(11) $-2\frac{2}{7}$	(16) $-5\frac{9}{11}$	(14) -5	(19) $2\frac{5}{11}$
(24) $-\frac{2}{5}$	(33) 0				
(25) $-\frac{3}{5}$	(34) $-\frac{6}{7}$	(12) 4	(17) $6\frac{9}{11}$	(15) $7\frac{1}{3}$	(20) $-1\frac{7}{11}$

G31-35 (3-5 min)

31	32
Ex. (1) $-1\frac{2}{5}$ (2) $-\frac{3}{5}$ (3) $-2\frac{4}{7}$ (4) $-1\frac{3}{7}$ (5) $-3\frac{1}{7}$ (6) $-2\frac{6}{7}$	(1) $-2\frac{\boxed{3}}{5}$ (2) $\boxed{6}-1\frac{\boxed{2}}{5}$ (3) $-1\frac{2}{5}$ (4) $-\frac{3}{5}$ (5) $-2\frac{4}{7}$ (6) $-1\frac{3}{7}$ (7) $-3\frac{1}{7}$ (8) $-2\frac{6}{7}$
31	32
(7) $2\frac{\boxed{3}}{5}$ (8) $\boxed{6}1\frac{\boxed{2}}{5}$ (9) $3\frac{2}{5}$ (10) $2\frac{3}{5}$ (11) $4\frac{4}{7}$ (12) $3\frac{3}{7}$ (13) $5\frac{1}{7}$ (14) $4\frac{6}{7}$	Ex. (9) $-2\frac{2}{5}$ (10) $-1\frac{3}{5}$ (11) $-4\frac{2}{7}$ (12) $-3\frac{5}{7}$ (13) $-3\frac{2}{9}$ (14) $-2\frac{7}{9}$

33	34	35
(1) $3\frac{2}{5}$	(1) $3\frac{1}{5}$	(1) $2\frac{3}{7}$
(2) $2\frac{3}{5}$	(2) $2\frac{4}{5}$	(2) $1\frac{4}{7}$
(3) $5\frac{3}{7}$	(3) $-3\frac{1}{5}$	(3) $3\frac{7}{9}$
(4) $4\frac{4}{7}$	(4) $-2\frac{4}{5}$	(4) $2\frac{2}{9}$
(5) $-2\frac{3}{7}$	(5) $-3\frac{1}{5}$	(5) $7\frac{7}{9}$
(6) $-1\frac{4}{7}$	(6) $-2\frac{4}{5}$	(6) $-7\frac{7}{9}$
(7) $-2\frac{1}{9}$	(7) $3\frac{1}{5}$	(7) $-5\frac{4}{11}$
(8) $-1\frac{8}{9}$	(8) $2\frac{4}{5}$	(8) $-4\frac{7}{11}$
33	34	35
Ex.		
(9) $1\frac{3}{5}$	(9) $4\frac{2}{5}$	(9) $-4\frac{1}{7}$
(10) $-1\frac{3}{5}$	(10) $\boxed{7} - 4\frac{\boxed{2}}{5}$	(10) $-3\frac{6}{7}$
(11) $-1\frac{4}{7}$	(11) $5\frac{2}{7}$	(11) $-4\frac{2}{7}$
(12) $1\frac{4}{7}$	(12) $-5\frac{2}{7}$	(12) $-3\frac{5}{7}$
(13) $-3\frac{4}{9}$	(13) $1\frac{4}{7}$	(13) $8\frac{7}{11}$
(14) $-3\frac{4}{9}$	(14) $-1\frac{4}{7}$	(14) $5\frac{3}{13}$
	(15) $8\frac{4}{9}$	(15) $4\frac{10}{13}$
	(16) $-8\frac{4}{9}$	(16) $-6\frac{15}{17}$

G36-40 (3-5 min)

36	37
Ex. (1) $-1\frac{2}{9}$ (2) $-\frac{7}{9}$ (3) $-2\frac{2}{9}$ (4) $-1\frac{8}{9}$ (5) $3\frac{1}{10}$ (6) $2\frac{7}{10}$	(1) $1\frac{1}{4}$ (2) $\frac{3}{4}$ (3) $-1\frac{1}{4}$ (4) $-\frac{3}{4}$ (5) $-2\frac{1}{4}$ (6) $-1\frac{3}{4}$ (7) $2\frac{1}{4}$ (8) $1\frac{3}{4}$
36	37
(7) $\boxed{3} - 2\frac{2}{9}$ (8) $\boxed{3} \boxed{12} - 1\frac{7}{9}$ (9) $-3\frac{1}{6}$ (10) $-2\frac{5}{6}$ (11) $4\frac{2}{9}$ (12) $3\frac{8}{9}$ (13) $5\frac{1}{10}$ (14) $4\frac{7}{10}$	(9) $1\frac{5}{9}$ (10) $-1\frac{5}{9}$ (11) $\frac{4}{9}$ (12) $-\frac{4}{9}$ (13) $-2\frac{5}{9}$ (14) $2\frac{5}{9}$ (15) $-1\frac{4}{9}$ (16) $1\frac{4}{9}$

38	39	40
(1) $\boxed{2} - 2\frac{1}{6}$	(1) $2\frac{7}{10}$	(1) $1\frac{3}{5}$
(2) $-2\frac{1}{2}$	(2) $-2\frac{3}{10}$	(2) $1\frac{11}{15}$
(3) $-1\frac{5}{8}$	(3) $1\frac{3}{5}$	(3) $-1\frac{3}{5}$
(4) $-3\frac{1}{8}$	(4) $-1\frac{3}{5}$	(4) $-1\frac{11}{15}$
(5) $-2\frac{7}{8}$	(5) $-4\frac{1}{5}$	(5) $1\frac{2}{5}$
(6) $2\frac{7}{8}$	(6) $3\frac{1}{5}$	(6) $-1\frac{2}{5}$
(7) $2\frac{1}{2}$	(7) $-2\frac{4}{5}$	(7) $-2\frac{2}{5}$
(8) $-2\frac{3}{10}$	(8) $2\frac{4}{5}$	(8) $-3\frac{13}{15}$
38	39	40
(9) $1\frac{1}{6}$	(9) $2\frac{1}{3}$	(9) $2\frac{1}{9}$
(10) $-1\frac{1}{6}$	(10) $-2\frac{1}{6}$	(10) $\frac{7}{9}$
(11) $-1\frac{5}{6}$	(11) $-2\frac{1}{6}$	(11) $-1\frac{7}{9}$
(12) $-2\frac{3}{8}$	(12) $1\frac{5}{6}$	(12) $-3\frac{1}{9}$
(13) $-2\frac{1}{8}$	(13) $-4\frac{1}{6}$	(13) $4\frac{1}{6}$
(14) $2\frac{1}{8}$	(14) $3\frac{1}{3}$	(14) $-2\frac{2}{3}$
(15) $-3\frac{3}{10}$	(15) $3\frac{1}{3}$	(15) $3\frac{2}{3}$
(16) $-4\frac{3}{10}$	(16) $-4\frac{1}{3}$	(16) $-5\frac{1}{6}$

G41-45 (3-5 min)

41	42	43
Ex. (1) $-3\frac{1}{6}$ (2) $-2\frac{5}{6}$ (3) $-4\frac{5}{8}$ (4) $-3\frac{3}{8}$ (5) $-3\frac{5}{12}$ (6) $-2\frac{7}{12}$	(1) $-3\frac{2}{9}$ (2) $-2\frac{7}{9}$ (3) $-2\frac{1}{6}$ (4) $-1\frac{5}{6}$ (5) $-4\frac{5}{8}$ (6) $-3\frac{3}{8}$ (7) $-3\frac{5}{12}$ (8) $-2\frac{7}{12}$	(1) $-3\frac{1}{9}$ (2) $3\frac{1}{9}$ (3) $-2\frac{8}{9}$ (4) $2\frac{8}{9}$ (5) $-4\frac{7}{12}$ (6) $4\frac{7}{12}$ (7) $-3\frac{5}{12}$ (8) $3\frac{5}{12}$
41	42	43
(7) $3\frac{2}{9}$ (8) $2\frac{7}{9}$ (9) $2\frac{1}{6}$ (10) $1\frac{5}{6}$ (11) $4\frac{5}{8}$ (12) $3\frac{3}{8}$ (13) $3\frac{5}{12}$ (14) $2\frac{7}{12}$	(9) $3\frac{1}{9}$ (10) $-3\frac{1}{9}$ (11) $2\frac{8}{9}$ (12) $-2\frac{8}{9}$ (13) $4\frac{7}{12}$ (14) $-4\frac{7}{12}$ (15) $3\frac{5}{12}$ (16) $-3\frac{5}{12}$	(9) $3\frac{1}{12}$ (10) $2\frac{11}{12}$ (11) $-3\frac{1}{12}$ (12) $-2\frac{11}{12}$ (13) $4\frac{1}{18}$ (14) $10\frac{5}{18}$ (15) $-4\frac{1}{18}$ (16) $-3\frac{17}{18}$

44	45
(1) $-5\frac{4}{9}$	(1) $2\frac{3}{8}$
(2) $-6\frac{1}{9}$	(2) $-\frac{7}{8}$
(3) $-5\frac{8}{15}$	(3) $\frac{7}{8}$
(4) $-6\frac{2}{15}$	(4) $-2\frac{3}{8}$
(5) $-6\frac{3}{4}$	(5) $4\frac{11}{12}$
(6) $7\frac{1}{4}$	(6) $-1\frac{5}{12}$
(7) $4\frac{1}{9}$	(7) $1\frac{5}{12}$
(8) $-4\frac{4}{9}$	(8) $-4\frac{11}{12}$
44	45
(9) $6\frac{5}{12}$	(9) $8\frac{4}{15}$
(10) $3\frac{1}{12}$	(10) $-3\frac{1}{15}$
(11) $-6\frac{5}{12}$	(11) $-2\frac{14}{15}$
(12) $-3\frac{1}{12}$	(12) $-8\frac{4}{15}$
(13) $4\frac{1}{10}$	(13) $4\frac{1}{3}$
(14) $-9\frac{1}{2}$	(14) $-4\frac{1}{3}$
(15) $-4\frac{1}{10}$	(15) $-3\frac{2}{3}$
(16) $-3\frac{9}{10}$	(16) $-9\frac{1}{6}$

G46-50 (3-5 min)

46		47
Ex. 1. (1) $\boxed{+} 2$ (2) $\boxed{-} 2$ (3) $\boxed{-} 2$ (4) $\boxed{+} 2$ (5) $+ 5$ (6) $- 5$ (7) $- 5$ (8) $+ 5$		(9) $- 7$ (10) $+ 7$ (11) $+ 7$ (12) $- 7$ (13) $+ 9$ (14) $+ 9$ (15) $- 9$ (16) $- 9$ (1) $- 5$ (2) $- 5$ (3) 5 (4) 5 (5) $- 5$ (6) $- 5$ (7) 5 (8) 5 (9) 13 (10) $- 13$
46		47
Ex. 2. (1) $\boxed{+} 8$ (2) $\boxed{-} - 8$ (3) $- 8$ (4) 8 (5) $- 8$ (6) $- 8$ (7) 8 (8) 8 (9) 2 (10) 2		(11) $\boxed{3} \boxed{4} \frac{1}{6}$ (12) $-\frac{1}{6}$ (13) $\frac{1}{6}$ (14) $-\frac{1}{6}$ (15) $\frac{1}{3}$ (16) $-\frac{1}{3}$ (17) $1\frac{1}{6}$ (18) $-1\frac{1}{6}$

48	49	50
(1) $1\frac{1}{6}$	(1) $-\frac{11}{12}$	(1) $-3\frac{13}{15}$
(2) $-1\frac{1}{6}$	(2) $-8\frac{11}{12}$	(2) $-10\frac{13}{20}$
(3) $2\frac{1}{6}$	(3) $-4\frac{29}{30}$	(3) $-1\frac{2}{3}$
(4) $-2\frac{1}{6}$	(4) $-4\frac{1}{8}$	(4) $-\frac{4}{5}$
(5) $\frac{11}{12}$	(5) $11\frac{5}{24}$	(5) $-6\frac{7}{24}$
(6) $2\frac{7}{12}$	(6) $-4\frac{1}{3}$	(6) $-2\frac{23}{36}$
(7) $-\frac{11}{12}$		
(8) $-2\frac{7}{12}$		
48	49	50
(9) $-2\frac{1}{3}$	(7) $-2\frac{3}{8}$	(7) $-2\frac{13}{21}$
(10) $2\frac{1}{3}$	(8) $5\frac{7}{24}$	(8) $5\frac{5}{9}$
(11) $4\frac{2}{3}$	(9) $-10\frac{5}{18}$	(9) $-6\frac{1}{12}$
(12) $-4\frac{2}{3}$	(10) $-6\frac{7}{20}$	(10) $-1\frac{5}{18}$
(13) $8\frac{11}{18}$	(11) $6\frac{1}{10}$	(11) $-\frac{1}{3}$
(14) $2\frac{17}{18}$	(12) $-7\frac{2}{15}$	(12) $4\frac{7}{30}$
(15) $-2\frac{17}{18}$		
(16) $-8\frac{11}{18}$		

G51-55 (4-6 min)

51	52	53
<p>(1) 10</p> <p>(2) 4</p> <p>(3) -2</p> <p>(4) -3</p> <p>(5) 0</p> <p>(6) -7</p> <p>(7) -9</p> <p>(8) -9</p> <p>(9) 7</p> <p>(10) -7</p>	<p>Ex.</p> <p>(1) $\boxed{7} \boxed{3} 4$</p> <p>(2) 2</p> <p>(3) -4</p> <p>(4) -3</p> <p>(5) 3</p> <p>(6) -2</p> <p>(7) 1</p> <p>(8) -6</p>	<p>(1) $\frac{3}{7}$</p> <p>(2) $-1\frac{3}{7}$</p> <p>(3) $-3\frac{1}{7}$</p> <p>(4) $2\frac{1}{7}$</p> <p>(5) $-\frac{2}{9}$</p> <p>(6) $1\frac{2}{9}$</p> <p>(7) $1\frac{1}{9}$</p> <p>(8) $-1\frac{1}{11}$</p>
51	52	53
<p>(11) $\frac{4}{7}$</p> <p>(12) $-\frac{1}{9}$</p> <p>(13) $\frac{4}{11}$</p> <p>(14) $-\frac{7}{13}$</p> <p>(15) $-\frac{4}{15}$</p> <p>(16) $\frac{2}{9}$</p> <p>(17) $-\frac{6}{11}$</p> <p>(18) $-\frac{10}{17}$</p>	<p>Ex.</p> <p>(9) $\boxed{3} \boxed{4} -\frac{1}{5}$</p> <p>(10) $\frac{1}{7}$</p> <p>(11) $-\frac{3}{7}$</p> <p>(12) $\frac{2}{7}$</p> <p>(13) $-\frac{1}{7}$</p> <p>(14) $\frac{2}{9}$</p>	<p>Ex.</p> <p>(9) $\frac{5}{16}$</p> <p>(10) $-\frac{5}{16}$</p> <p>(11) $-\frac{3}{16}$</p> <p>(12) $\frac{5}{18}$</p> <p>(13) $\frac{1}{18}$</p> <p>(14) $-\frac{17}{18}$</p>

54	55
<p>(1) $\begin{array}{ c } \hline 3 \\ \hline \end{array} \begin{array}{ c } \hline 2 \\ \hline \end{array} \begin{array}{ c } \hline 1 \\ \hline \end{array}$</p> <p>$\begin{array}{ c } \hline 4 \\ \hline \end{array} \begin{array}{ c } \hline 2 \\ \hline \end{array} 1\frac{1}{3}$</p> <p>(2) $-1\frac{2}{3}$</p> <p>(3) $-\frac{3}{8}$</p> <p>(4) $2\frac{5}{8}$</p> <p>(5) $3\frac{1}{8}$</p>	<p>(1) $1\frac{11}{30}$</p> <p>(2) $-3\frac{7}{30}$</p> <p>(3) $-\frac{17}{30}$</p> <p>(4) $3\frac{7}{30}$</p> <p>(5) $-1\frac{11}{30}$</p>
54	55
<p>(6) $4\frac{1}{2}$</p> <p>(7) $-4\frac{1}{3}$</p> <p>(8) $-3\frac{5}{6}$</p> <p>(9) $4\frac{1}{3}$</p> <p>(10) $-4\frac{1}{2}$</p> <p>(11) -5</p>	<p>(6) $\frac{7}{20}$</p> <p>(7) $-1\frac{17}{20}$</p> <p>(8) $-4\frac{1}{20}$</p> <p>(9) $-\frac{7}{20}$</p> <p>(10) $-2\frac{17}{20}$</p>

G56-60 (4-6 min)

56	57	58
(1) $\boxed{3} \boxed{4} 1$	(1) $-3\frac{5}{8}$	(1) $-\frac{1}{4}$
(2) $2\frac{1}{3}$	(2) $1\frac{1}{8}$	(2) $-4\frac{7}{12}$
(3) $-1\frac{1}{3}$	(3) $-\frac{1}{8}$	(3) $-4\frac{3}{8}$
(4) 0	(4) $-1\frac{1}{8}$	(4) $-4\frac{3}{8}$
(5) -1	(5) $3\frac{5}{8}$	(5) $-1\frac{5}{24}$
56	57	58
(6) $\frac{1}{3}$	(6) $\frac{5}{8}$	(6) 12
(7) $-1\frac{1}{3}$	(7) $-3\frac{5}{8}$	(7) $-1\frac{1}{2}$
(8) -3	(8) $-4\frac{7}{8}$	(8) -1
(9) $-1\frac{1}{3}$	(9) $-1\frac{7}{8}$	(9) -1
(10) $1\frac{1}{3}$	(10) $4\frac{7}{8}$	(10) 10
(11) 3	(11) $-\frac{5}{8}$	

59	60
Ex. (1) $-\frac{9}{20}$ (2) $\frac{1}{24}$ (3) $-\frac{13}{18}$ (4) $\frac{7}{12}$ (5) $-\frac{7}{24}$	(1) 0 (2) -6 (3) 3 (4) -3 (5) 1 (6) -7 (7) 11 (8) 7 (9) 13 (10) 7
59	60
(6) $\frac{3}{4}$ (7) $-\frac{1}{2}$ (8) $-\frac{1}{6}$ (9) 2 (10) $-3\frac{1}{3}$	(11) $\frac{17}{18}$ (12) $-6\frac{1}{18}$ (13) $-\frac{1}{8}$ (14) $\frac{1}{8}$ (15) $-8\frac{23}{36}$ (16) $1\frac{35}{36}$

G61-65 (3-5 min)

61	62
<div>Ex.</div> <div>(1) 6</div> <div>(2) - 6</div> <div>(3) - 15</div> <div>(4) - 15</div> <div>(5) - 24</div> <div>(6) 24</div> <div>(7) 40</div> <div>(8) 0</div>	<div>1.</div> <div>(1) 40</div> <div>(2) - 40</div> <div>(3) - 40</div> <div>(4) 0</div> <div>(5) - $\frac{1}{8}$</div> <div>(6) - 4 $\frac{1}{2}$</div> <div>(7) 5 $\frac{1}{4}$</div> <div>(8) - 33</div>
61	62
<div>Ex.</div> <div>(9) - $\frac{1}{2}$</div> <div>(10) - $\frac{2}{5}$</div> <div>(11) $\frac{1}{6}$</div> <div>(12) - $\frac{1}{2}$</div> <div>(13) 4 $\frac{1}{2}$</div> <div>(14) 26</div> <div>(15) 0</div>	<div>2.</div> <div>(1) - 30</div> <div>(2) - 24</div> <div>(3) 24</div> <div>(4) 30</div> <div>(5) - 48</div> <div>(6) - $\frac{1}{4}$</div> <div>(7) - 12</div>

[From G64 onwards, check if students determine the sign first,
if they make many mistakes on the sign.]

G61-65

63	64	65
Ex. 1. (1) -30 (2) 30 (3) 30 (4) -30 (5) -60 (6) 60 (7) 60 (8) -60	Ex. (1) -8 (2) 120 (3) $- \boxed{27} \boxed{10} \boxed{2} - 1$ (4) -2 (5) 0 (6) $\frac{1}{10}$ (7) $\frac{1}{5}$	Ex. (1) 12 (2) -10 (3) 40 (4) -24 (5) $-\frac{1}{10}$ (6) -2
63	64	65
2. (1) $- \boxed{6} \boxed{3}$ (2) $6 \boxed{4}$ (3) $6 \boxed{2}$ (4) $-6 \boxed{5}$ (5) $6 \boxed{4}$ 3. (1) $-$ $+$ $-$ (2) $+$	Ex. (8) -15 (9) 4 (10) $-\frac{8}{9}$ (11) -2 (12) -5 (13) $1\frac{2}{3}$ (14) -1	(7) 30 (8) -30 (9) 24 (10) -42 (11) -8 (12) -54 (13) -1 (14) 0 (15) 3

G66-70 (3-5 min)

66		67	
Ex.		Ex.	
(1)	8	(1)	4
(2)	16	(2)	− 4
(3)	32	(3)	− 8
(4)	64	(4)	8
(5)	9	(5)	9
(6)	27	(6)	− 9
(7)	81	(7)	16
(8)	16	(8)	− 16
(9)	64	(9)	25
(10)	256	(10)	125
66		67	
(11)	1	(11)	− 25
(12)	− 1	(12)	− 27
(13)	4	(13)	− 16
(14)	− 8	(14)	16
(15)	16	(15)	− 9
(16)	− 32	(16)	− 36
(17)	9	(17)	49
(18)	− 27	(18)	$\frac{4}{9}$
(19)	16	(19)	$\frac{8}{27}$
(20)	− 64	(20)	$− \frac{1}{16}$

68	69	70
Ex.	Ex.	
(1) 4	(1) 8 (4) 27	(1) 9
(2) - 4		(2) - 8
(3) - 8	(2) - 8 (5) - 27	(3) - 16
(4) - 8		(4) 32
(5) 16	(3) - 16 (6) - 25	(5) $\frac{1}{16}$
(6) - 16	Ex.	(6) $\frac{1}{8}$
(7) - 32	(7) - 8 (10) - 27	(7) $-3\frac{3}{8}$
(8) - 32	(8) 8 (11) 27	(8) $3\frac{3}{8}$
(9) - 25	(9) - 16 (12) - 25	(9) $1\frac{2}{3}$
(10) - 125		(10) $1\frac{2}{3}$
68	69	70
(11) 9	(13) 16 (20) - 25	(11) 9
(12) - 9	(14) - 16 (21) 125	(12) 1
(13) - 9	(15) - 64 (22) - 9	(13) 4
(14) 8	(16) 81 (23) - 81	(14) 6
(15) 8	(17) - 1 (24) $\frac{1}{4}$	(15) 9
(16) 27	(18) 1 (25) $-\frac{1}{9}$	(16) 1
(17) - 64	(19) 1 (26) $-\frac{8}{27}$	(17) - 1
(18) $-3\frac{3}{8}$		(18) - 17
(19) $-2\frac{10}{27}$		(19) 1
(20) $-6\frac{1}{4}$		(20) 17

G71-75 (4-6 min)

71	72	73
Ex.		
(1) 4	(1) - 5	(1) 2
(2) - 4	(2) - 3	(2) $-\frac{1}{2}$
(3) - 4	(3) - 3	(3) - 18
(4) 4	(4) 3	(4) 0
(5) 0	(5) 0	(5) - 2
(6) - 5	(6) 2	(6) $\frac{1}{2}$
(7) - 5	(7) 4	(7) $-\frac{1}{18}$
(8) 5	(8) 10	(8) 0
71	72	73
Ex.		
(9) $-1\frac{4}{5}$	(9) $1\frac{1}{3}$	(9) $-\frac{1}{4}$
(10) $\frac{7}{8}$	(10) $-\frac{3}{10}$	(10) 2
(11) $-1\frac{1}{2}$	(11) $\frac{4}{27}$	(11) $-\frac{3}{10}$
(12) $2\frac{1}{2}$	(12) 70	(12) 18
(13) $-1\frac{3}{7}$	(13) $2\frac{7}{9}$	(13) 3
(14) $3\frac{3}{5}$	(14) $-2\frac{2}{9}$	(14) $2\frac{2}{9}$

74	75
Ex. (1) $-\frac{1}{3}$ (2) $-\frac{1}{4}$ (3) $\frac{8}{9}$ (4) $-\frac{2}{5}$ (5) $1\frac{1}{3}$ (6) $6\frac{2}{5}$	(1) $-\frac{1}{4}$ (2) -1 (3) -3 (4) 24 (5) 16
74	75
Ex. (7) $3\frac{3}{8}$ (8) 4 (9) $-\frac{1}{4}$ (10) $-\frac{2}{5}$	(6) -3 (7) -24 (8) $6\frac{3}{4}$ (9) -6 (10) $-2\frac{3}{7}$

G76-80 (4-6 min)

76	77	78
Ex. (1) -72 (2) $-\frac{8}{9}$ (3) $2\frac{2}{3}$ (4) 72 (5) 64 (6) $-\frac{4}{27}$ (7) 72	Ex. (1) $-\frac{1}{4}$ (2) -2 (3) $-\frac{1}{2}$ (4) $-\frac{1}{2}$ (5) -4 (6) -8	Ex. (1) $3\frac{5}{9}$ (2) $30\frac{3}{8}$ (3) $10\frac{2}{3}$ (4) $\frac{8}{243}$ (5) $\frac{3}{32}$
76	77	78
(8) $\frac{4}{27}$ (9) $\frac{16}{25}$ (10) -8 (11) -8 (12) -27 (13) $-\frac{1}{32}$ (14) -243 (15) 1	Ex. (7) -2 (8) -3 (9) $\frac{1}{2}$ (10) -4 (11) $-\frac{1}{4}$	(6) $\frac{2}{3}$ (7) $\frac{4}{9}$ (8) $\frac{2}{3}$ (9) $\frac{1}{50}$ (10) 5 (11) 16

79	80
(1) $\square - \square 8$	(1) $-1\frac{1}{3}$
(2) 16	(2) $4\frac{4}{5}$
(3) $\square - 8$	(3) $-1\frac{2}{5}$
(4) -2	(4) 16
(5) -27	(5) $-\frac{3}{5}$
(6) 27	(6) 1
79	80
(7) $\square - \frac{3}{4}$	(7) 2
(8) $-\frac{4}{27}$	(8) $\frac{1}{54}$
(9) -3	(9) $-2\frac{2}{3}$
(10) -72	(10) $-\frac{5}{6}$
(11) -6	(11) $6\frac{1}{4}$
(12) -128	(12) -12

G81-85 (4-6 min)

81	82	83
<div>Ex.</div> <div>(1) - 14</div> <div>(2) - 8</div> <div>(3) 16</div> <div>(4) 7</div> <div>(5) 7</div> <div>(6) 29</div> <div>(7) 4</div> <div>(8) - 27</div>	<div>Ex.</div> <div>(1) - 14</div> <div>(2) - 7</div> <div>(3) 9</div> <div>(4) 18</div> <div>(5) 2</div> <div>(6) - 11</div> <div>(7) - 17</div> <div>(8) 6</div>	<div>(1) - 3</div> <div>(2) 1</div> <div>(3) - 12</div> <div>(4) - 22</div> <div>(5) 18</div> <div>(6) - 9</div> <div>(7) 5</div> <div>(8) 0</div>
81	82	83
<div>Ex.</div> <div>(9) 5</div> <div>(10) - 19</div> <div>(11) 32</div> <div>(12) - 8</div> <div>(13) 0</div> <div>(14) 5</div> <div>(15) 1</div> <div>(16) - 23</div>	<div>(9) 3</div> <div>(10) - 7</div> <div>(11) - 4</div> <div>(12) - 42</div> <div>(13) - 40</div> <div>(14) - 15</div> <div>(15) - 5</div> <div>(16) - 15</div>	<div>(9) - 10</div> <div>(10) - 3</div> <div>(11) 17</div> <div>(12) 88</div> <div>(13) 23</div> <div>(14) 6</div> <div>(15) - 5</div> <div>(16) - 4</div>

[In G84-100, check if students write the appropriate intermediate steps, if they make many mistakes.]

G81-85

84	85
(1) $\frac{\boxed{3}}{\boxed{4}}$ or $\frac{\boxed{9}}{\boxed{12}} - \frac{1}{3}$	(1) $\frac{2}{5}$
(2) $-1\frac{1}{9}$	(2) $-1\frac{1}{5}$
(3) $-\frac{2}{3}$	(3) -4
(4) $\frac{1}{12}$	(4) -5
(5) -4	(5) 4
(6) $4\frac{3}{5}$	(6) 0
84	85
(7) -1	(7) -4
(8) 1	(8) 1
(9) 0	(9) $2\frac{13}{20}$
(10) 0	(10) $-3\frac{1}{2}$
(11) 2	(11) -6
(12) $-\frac{1}{3}$	(12) -6

G86-90 (4-6 min)

86	87	88
(1) $-1\frac{1}{6}$	(1) $-\frac{2}{11}$	(1) $\frac{6}{7}$
(2) $-\frac{1}{3}$	(2) $-\frac{1}{4}$	(2) $\frac{2}{3}$
(3) -3	(3) $\frac{5}{6}$	(3) $3\frac{3}{5}$
(4) 1	(4) $-\frac{6}{7}$	(4) $1\frac{5}{8}$
(5) -1	(5) $-6\frac{2}{3}$	(5) -8
(6) $-\frac{5}{6}$	(6) $-\frac{4}{5}$	
86	87	88
(7) $-1\frac{5}{18}$	(7) -5	(6) 1
(8) $1\frac{13}{20}$	(8) -1	(7) $\frac{2}{9}$
(9) $-1\frac{13}{18}$	(9) -4	(8) $-\frac{2}{3}$
(10) $3\frac{3}{4}$	(10) 1	(9) 7
	(11) -3	(10) -15
	(12) -5	

89	90
(1) 100	(1) - 6
(2) - 200	(2) $-\frac{13}{15}$
(3) 500	(3) $-\frac{5}{12}$
(4) - 128	(4) $-2\frac{4}{9}$
(5) 1	(5) - 1
(6) 4	
(7) $-\frac{2}{3}$	
(8) $-\frac{2}{3}$	
89	90
(9) 16	(6) - 1
(10) $2\frac{2}{3}$	(7) 16
(11) $-\frac{2}{9}$	(8) $\frac{2}{3}$
(12) $\frac{1}{32}$	(9) $-1\frac{2}{3}$
(13) - 16	(10) - 11
(14) - 128	

G91–95 (4–6 min)

91	92	93
<div>(1) <div><div>70</div><div>49</div><div>21</div></div></div>	<div>(1) 2</div>	<div>(1) 7</div>
<div>(2) - 10</div>	<div>(2) - 2¹/₅</div>	<div>(2) - 1</div>
<div>(3) 2⁴/₂₃</div>	<div>(3) - 2⁸/₉</div>	<div>(3) - 2¹/₇</div>
<div>(4) - 1¹/₃</div>	<div>(4) - 1¹/₂</div>	<div>(4) ¹/₂</div>
<div>(5) 2²/₃</div>	<div>(5) - 1¹/₂</div>	<div>(6) - 31</div>
<div>(6) - 1</div>	<div>(6) 14</div>	<div>(7) - 90</div>
<div>(7) 24</div>	<div>(7) - 14¹/₈</div>	<div>(8) - 60</div>
<div>(8) 1¹/₁₂</div>	<div>(8) ⁵/₉</div>	<div>(9) - 78</div>
<div>(10) ³/₅</div>		

94	95
(1) $-3\frac{3}{8}$	(1) -2
(2) -82	(2) $2\frac{4}{9}$
(3) $-5\frac{5}{12}$	(3) $-\frac{7}{8}$
(4) -12	(4) 1
94	95
(5) $-\frac{13}{24}$	(5) $-\frac{1}{2}$
(6) $-\frac{3}{5}$	(6) 0
(7) $5\frac{1}{6}$	(7) -7
(8) $-1\frac{9}{10}$	(8) $-\frac{1}{6}$

G96-100 (4-6 min)

96	97	98
(1) $-\frac{1}{3}$	(1) $\frac{1}{6}$	(1) $-\frac{1}{3}$
(2) $-4\frac{3}{8}$	(2) $-\frac{1}{24}$	(2) $-\frac{5}{12}$
(3) $-\frac{3}{5}$	(3) $3\frac{1}{15}$	(3) $-\frac{1}{8}$
(4) 1	(4) $4\frac{1}{5}$	(4) 18
	(5) $1\frac{2}{5}$	(5) -800
96	97	98
(5) $-\frac{1}{3}$	(6) $-\frac{1}{20}$	(6) $-\frac{3}{28}$
(6) $\frac{7}{10}$	(7) $-1\frac{1}{50}$	(7) -7
(7) 0	(8) $-9\frac{1}{5}$	(8) $-\frac{3}{7}$
	(9) $-2\frac{4}{5}$	(9) $\frac{1}{15}$
(8) $-\frac{2}{9}$	(10) $-4\frac{5}{8}$	(10) $-\frac{1}{2}$

99	100
Ex. (1) $\frac{1}{8}$ (2) $\boxed{\frac{3}{4}} 2\frac{2}{3}$ (3) -12 (4) $-\frac{4}{5}$	(1) $-1\frac{3}{4}$ (2) -6 (3) $-\frac{3}{7}$ (4) -3 (5) $-\frac{1}{90}$
99	100
(5) $\boxed{5} \frac{1}{3}$ (6) $\frac{8}{15}$ (7) $\frac{1}{2}$ (8) $3\frac{1}{3}$ (9) $\frac{2}{3}$ (10) $-\frac{2}{7}$	(6) $\frac{7}{10}$ (7) $-\frac{1}{12}$ (8) $-1\frac{7}{30}$ (9) $-\frac{11}{12}$

G101-105 (4-6 min)

In G101-120, check if students write the intermediate steps for substitution, if they make many mistakes.

101	102	103
Ex. 1. (1) 5 (2) 5 (3) 6 (4) 9 (5) 7 (6) 7 (7) 15 (8) 15 (9) 15 (10) 15	1. (1) -9 $(6) - 10\frac{1}{2}$ (2) (-3) $(7) - 9$ -2 (3) -2 $(8) - 9$ (4) (-3) $(9) - 9$ -2 (5) $- \frac{3}{4}$ $(10) - 4$	1. (1) -2 (2) -8 (3) -12 (4) -5 (5) -5 (6) -24 (7) -24 (8) -24 (9) -24 (10) -24
101	102	103
2. (1) 8 (2) -8 (3) 8 (4) 8 (5) 8 (6) 2 (7) 2 (8) 6 (9) 6 (10) $2\frac{2}{3}$	2. (1) 12 (2) 18 (3) 3 (4) 2 (5) 4 (6) 1 (7) 18 (8) 12 (9) 1 (10) 3	2. (1) -18 (2) 18 (3) -18 (4) 18 (5) -3 (6) -3 (7) -5 (8) -5 (9) -5 (10) -4

※G104 Problem 2. is marked correct only when all the problems are correct.

104		105	
1.		1.	
(1) 1	(6) $1\frac{1}{2}$	(1) 4	
(2) 1	(7) $1\frac{1}{2}$	(2) -8	
(3) $1\frac{1}{2}$	(8) 1	(3) 16	
(4) $\frac{1}{6}$	(9) 1	(4) -32	
(5) $\frac{1}{6}$		(5) 64	
2.		(6) -128	
<div>2, 8&9, 6&7, 5</div>		(7) 256	
		(8) 64	
		(9) 64	
		(10) -32	
104		105	
3.		2.	
(1) -1	(6) $1\frac{2}{3}$	(1) $\frac{1}{2}$	(6) 16
(2) 1	(7) $-\frac{2}{3}$	(2) 1	(7) 64
(3) $-\frac{1}{4}$	(8) $-\frac{2}{3}$	(3) 1	(8) 64
(4) $-\frac{1}{4}$	(9) $-\frac{2}{3}$	(4) 2	(9) 64
(5) $-\frac{5}{12}$	(10) $-\frac{2}{3}$	(5) 16	(10) 32

G106–110 (4–6 min)

106	107	108
<div>1. (1) 9 (2) 18 (3) 45 (4) 45 (5) 18 (6) 18 (7) 9 (8) -9 (9) -9</div> <div>2. 7, 5&6, 4, 9</div>	<div>1. (1) -12 (2) -12 (3) -12 (4) -12 (5) 18 (6) 18 (7) -10 (8) -10</div> <div>2. 2, 3&4, 6, 8</div>	<div>1. (1) 1⁴/₅ (2) 1/2 (3) -2¹/₃ (4) -4¹/₄ (5) -⁷/₁₀ (6) -7</div>
106	107	108
<div>3. (1) 1/4 (6) -1/4 (2) -1/4 (7) 1 (3) 1/4 (8) 1 (4) -1/4 (9) -1 (5) 1/4 (10) -1</div>	<div>3. (1) -12 (2) -12 (3) -12 (4) 7 (5) -7 (6) -7 (7) 21 (8) 21 (9) -14</div>	<div>2. (1) -5/7 (2) 3¹/₄ (3) -2¹/₃ (4) -2²/₃ (5) -1⁷/₂₄ (6) -31</div>

109		110	
1.		1.	
(1)	$2\frac{1}{3}$	(1)	13
(2)	$-\frac{2}{5}$	(2)	$-4\frac{1}{5}$
(3)	$3\frac{1}{3}$	(3)	$2\frac{5}{8}$
(4)	0	(4)	2
(5)	$1\frac{1}{2}$	(5)	9
(6)	$-\frac{1}{12}$	(6)	18
		(7)	-18
		(8)	-27
		(9)	54
		(10)	$-6\frac{2}{3}$
109		110	
2.		2.	
(1)	$-\frac{1}{5}$	(1)	$-7\frac{1}{2}$
(2)	$-\frac{1}{3}$	(2)	$-\frac{7}{12}$
(3)	$-2\frac{2}{15}$	(3)	1
(4)	$-1\frac{7}{15}$	(4)	$-\frac{3}{7}$
(5)	$-\frac{7}{12}$	(5)	15
(6)	$-\frac{5}{18}$	(6)	-30
		(7)	$\frac{1}{4}$
		(8)	$-\frac{1}{4}$
		(9)	$-\frac{1}{4}$

G111-115 (4-6 min)

111	112	113
1. (1) 26 (2) - 2 (3) - 16 (4) 26 (5) - 2 (6) - 2 (7) - 16 (8) - 16 2. 4 , 5 & 6 , 7 & 8	1. (1) 12 (2) 6 (3) 6 (4) 6 (5) 0 (6) 0 (7) - 1 $\frac{1}{2}$ (8) 0	1. (1) 18 (2) 18 (3) 18 (4) 18 (5) $3\frac{2}{3}$ (6) $3\frac{2}{3}$ 2. 2 , 3 & 4 , 6
111	112	113
3. (1) - 2 (2) 7 (3) 16 (4) - 2 (5) 7 (6) 7 (7) 7 (8) 16 (9) 16	2. (1) - 6 (2) - 2 (3) - 2 (4) $1\frac{1}{3}$ (5) - 2 (6) 6 (7) 6 (8) $3\frac{1}{3}$	3. (1) 8 (2) 7 (3) 8 (4) 8 (5) 7 (6) 8 (7) 7

114		115	
1. (1) $\frac{5}{12}$	(5) $-1\frac{1}{4}$	1. (1) $\frac{3}{8}$	(6) $\frac{9}{64}$
(2) $\frac{5}{6}$	(6) $-\frac{5}{12}$	(2) $-\frac{3}{8}$	(7) $-\frac{9}{64}$
(3) $\frac{5}{6}$	(7) $-\frac{5}{12}$	(3) $-\frac{3}{8}$	(8) $-\frac{9}{64}$
(4) $-1\frac{1}{4}$	(8) $-\frac{1}{12}$	(4) $\frac{3}{8}$	(9) $-\frac{9}{64}$
(5) $-\frac{1}{12}$		(5) $\frac{9}{64}$	
114		115	
2. (1) 8	(5) 19	2. (1) $-\frac{2}{3}$	(5) $\frac{4}{9}$
(2) $1\frac{1}{7}$	(6) $1\frac{7}{12}$	(2) $\frac{4}{9}$	(6) $-\frac{8}{27}$
(3) $1\frac{1}{7}$	(7) $1\frac{7}{12}$	(3) $\frac{8}{27}$	(7) $\frac{1}{81}$
(4) 8	(8) 19	(4) $\frac{2}{3}$	(8) $-\frac{1}{81}$

G116–120 (4–6 min)

116	117
<div>1. (1) $\frac{4}{9}$ (2) $\frac{1}{9}$ (3) $\frac{2}{9}$ (4) $\frac{5}{18}$ (5) $\frac{2}{9}$ (6) $\frac{4}{9}$ (7) $\frac{1}{9}$</div> <div>2. <div>6</div>, <div>7</div>, <div>5</div></div>	<div>1. (1) -15 (2) -15 (3) -15 (4) 8 (5) 8 (6) -52 (7) -52</div> <div>2. <div>2</div>&<div>3</div>, <div>5</div>, <div>7</div></div>
116	117
<div>3. (1) 25 (2) 125 (3) -1 (4) -19 (5) 25 (6) 125 (7) -1</div>	<div>3. (1) -40 (2) -40 (3) 60 (4) 60 (5) -40 (6) 60 (7) -8 (8) -40</div>

118		119		120	
1.		1.		1.	
(1)	-7	(1)	5	(1)	17
(2)	-5	(2)	0	(2)	4
(3)	-3	(3)	-3	(3)	4
(4)	-2	(4)	-4	(4)	0
(5)	-1	(5)	-3	(5)	4
(6)	0	(6)	0	(6)	4
(7)	1	(7)	5	(7)	8
(8)	3	(8)		(8)	17
118		119		120	
2.		2.		2.	
(1)	$1\frac{3}{4}$	(1)	0	(1)	$\frac{1}{6}$
(2)	$1\frac{1}{4}$	(2)	3	(2)	$-\frac{1}{6}$
(3)	$\frac{3}{4}$	(3)	4	(3)	$-\frac{1}{6}$
(4)	$\frac{1}{2}$	(4)	$3\frac{3}{4}$	(4)	$\frac{1}{36}$
(5)	$\frac{1}{4}$	(5)	3	(5)	$\frac{1}{36}$
(6)	0	(6)	$1\frac{3}{4}$	(6)	$\frac{5}{36}$
(7)	$-\frac{1}{4}$	(7)	0	(7)	$\frac{5}{36}$
(8)	$-\frac{3}{4}$	(8)	-5	(8)	$\frac{1}{36}$

G121-125 (3-5 min)

121		122		123			
Ex.		Ex.					
(1)	$4a$	(1)	$\frac{5}{7}x$	(7)	x	(1)	$7x$
(2)	$5x$					(2)	$-3x$
(3)	$5a$	(2)	$\frac{3}{7}x$	(8)	$-\frac{5}{9}x$	(3)	$-3x$
(4)	$7x$					(4)	$7x$
(5)	$4a$	(3)	$-\frac{3}{7}x$	(9)	$\frac{5}{9}x$	(5)	$4x$
(6)	$-4a$	(4)	$-\frac{5}{7}x$	(10)	$-x$	(6)	$-10x$
(7)	$-3x$					(7)	$-10x$
(8)	$6a$	(5)	x	(11)	$-\frac{7}{9}x$	(8)	$4x$
(9)	$6a$	(6)	$\frac{4}{7}x$	(12)	$-\frac{7}{9}x$	(9)	$-11x$
						(10)	x

121			122			123			
Ex.									
(10)	a	(18)	$2x$	(13)	$\frac{5}{6}x$	(11)	$-2a$	(16)	$-a$
(11)	$-a$	(19)	$-2x$	(14)	$\frac{1}{6}x$				
(12)	0	(20)	x	(15)	$-\frac{1}{6}x$	(12)	$4x$	(17)	$5a$
(13)	$6a$	(21)	$2a$	(16)	$-\frac{5}{6}x$				
(14)	$-3a$	(22)	$-3x$	(17)	$\frac{8}{15}x$	(13)	x	(18)	$-\frac{1}{12}a$
(15)	$2a$	(23)	$-5x$	(18)	$-\frac{2}{15}x$	(14)	$-7x$	(19)	$-\frac{7}{9}x$
(16)	$-3a$	(24)	$-x$	(19)	$-\frac{8}{15}x$				
(17)	$-7a$	(25)	0	(20)	$\frac{2}{15}x$	(15)	$15x$	(20)	$\frac{1}{3}a$

124		125	
Ex.			
(1) $\boxed{3}x + \boxed{6}$	(6) $-3x + 6$	(1) $-2x$	(6) $12x$
(2) $3x + 2$	(7) $3x - 6$	(2) $-12x$	(7) $2x - 3$
(3) $3x - 2$	(8) $3x - 2$	(3) $-2x$	(8) $-2x - 3$
(4) $-3x - 6$	(9) $-3x - 2$	(4) $4x + 2$	(9) $-\frac{5}{12}x$
(5) $3x + 6$	(10) $-3x - 6$	(5) $-2x - 3$	(10) $-\frac{5}{6}x - 9$
124		125	
Ex.			
(11) $8x + 5$	(16) $2x + 3$	(11) $\boxed{6}a + \boxed{9}$	(16) $-7x + 3$
(12) $2x + 3$	(17) $8x - 3$	(12) $-6a - 9$	(17) $-8x - 5$
(13) $-2x - 5$	(18) $-2x + 5$	(13) $-5a - 5$	(18) $\frac{1}{10}x + 5$
(14) $-8x - 3$	(19) $-8x + 3$	(14) $2a$	(19) $-\frac{1}{12}x - 6$
(15) $8x + 5$	(20) $-8x - 5$	(15) $-5x - 4$	(20) $-\frac{4}{7}x - \frac{7}{12}$

G126-130 (3-5 min)

126	127	128
Ex. (1) $5a + 5b$ (2) $7a + 3b$ (3) $7a + 4b$ (4) $5a + b$ (5) $7a + 2b$ (6) $7a - 2b$ (7) $11a - 2b$ (8) $5a + 2b$ (9) $2a + 2b$ (10) $5a - b$	(1) $-\frac{7}{12}x$ (2) $-\frac{1}{15}a$ (3) $-\frac{7}{10}x$ (4) $\frac{5}{12}a$ (5) $\frac{4}{15}a$ (6) $-\frac{7}{20}a$ (7) $-\frac{13}{30}a$	Ex. (1) $\frac{7}{3}a$ (6) $\frac{4}{3}a$ (2) $\frac{5}{4}a$ (7) $\frac{5}{4}a$ (3) $\frac{9}{4}a$ (8) $-\frac{14}{5}a$ (4) $\frac{17}{5}x$ (9) $-\frac{17}{3}x$ (5) $\frac{7}{4}y$ (10) $-\frac{8}{7}y$ *For students using the mixed numbers, have them read the instruction.
126	127	128
(11) $8a + \boxed{3}b$ (12) $8a + b$ (13) $-2a + 3b$ (14) $2a + 3b$ (15) $2a - b$ (16) $2a + b$ (17) $-8a + 3b$ (18) $-8a - 3b$ (19) $-2a + b$ (20) $8a - 3b$	(8) $a - \frac{1}{12}b$ (9) $2a - \frac{4}{15}b$ (10) $\frac{3}{4}a - \frac{17}{18}b$ (11) $-\frac{1}{6}a + \frac{1}{2}b$ (12) $-\frac{3}{8}a + \frac{4}{5}b$ (13) $-\frac{1}{3}a + \frac{4}{5}b$ (14) $\frac{5}{6}a - \frac{1}{3}b$	(11) $-\frac{7}{3}a + b$ (12) $\frac{9}{4}a - b$ (13) 0 (14) $-\frac{11}{2}a - 11$ (15) $-\frac{4}{5}a - \frac{7}{4}b$ (16) $-\frac{19}{6}x - y$ (17) $\frac{25}{9}x - \frac{7}{6}y$ (18) $\frac{1}{4}x - \frac{17}{12}$

129	130	
(1) $3a - 7b$ (2) $-a + b$ (3) $-4a + 8b - 3$ (4) $6a - b + 3$ (5) $-2x + 3y + 3$ (6) $3x - 5y - 2$ (7) $5b$ (8) $-4y$ (9) 0 (10) $2b + 5$	(1) $3a$ (2) $3a$ (3) $-a$ (4) $\frac{3}{2}x$ (5) $6a - 3b$	(6) $2x + y - 4$ (7) $9x + 2y - 38$ (8) $-\frac{6}{5}x - \frac{9}{4}y$ (9) $-2x^2 - 2x + 4$
129	130	
(11) $4a + 2b$ (12) $\boxed{4}x^2 + \boxed{2}x$ (13) $\boxed{3}x^2 + \boxed{6}x + \boxed{8}$ (14) $3x^2 + 2x - 2$ (15) $5x^2 - 3x + 5$ (16) $7x - 1$ (17) $-2x^2 + x$ (18) $x^2 - x - 12$ (19) $-6x^2 - 6x + 9$ (20) $x^2 - 2$	(10) $-\frac{13}{8}x$ (11) $\frac{5}{4}a$ (12) $-\frac{7}{8}a$ (13) $\frac{2}{3}a - \frac{7}{4}b$ (14) $\frac{13}{6}a^2 - \frac{1}{3}a + \frac{7}{4}$ (15) $\frac{1}{15}x^2 - \frac{3}{8}x$	

G131-135 (3-5 min)

[In G131, 132 and 133a, the answers should be marked correct even when the '+' sign of the first term is omitted.]

131		132	
Ex. (1) $-x \boxed{-} 2$ (2) $-x - 6$ (3) $-2x - 3$ (4) $-2x - 7$ (5) $-x \boxed{+} 4$ (6) $-2x + 8$ (7) $-a + 7$ (8) $-3a + 9$		Ex. (1) $+x - 4$ (2) $+x + 4$ (3) $+x + 5$ (4) $+x - 5$ (5) $-a - 7$ (6) $+a - 7$ (7) $-2a + 8$ (8) $+2a + 8$	
131		132	
Ex. (9) $-x + 2$ (10) $+x - 2$ (11) $-x + 5$ (12) $+x - 5$ (13) $-x - 6$ (14) $+x + 6$ (15) $+x - 8$ (16) $-x - 8$		Ex. (9) $+x - 2$ (10) $-x + 2$ (11) $+x + 4$ (12) $-x - 4$ (13) $+x - 5$ (14) $-x + 5$ (15) $+x + 7$ (16) $+x - 7$	
(17) $-a - 3$ (18) $-a + 5$ (19) $+a + 4$ (20) $+a - 6$ (21) $-a - 5$ (22) $+a + 7$ (23) $-x - 9$ (24) $-x + 10$		(17) $+a - 4$ (18) $-a + 4$ (19) $-a - 5$ (20) $+a + 5$ (21) $+a - 7$ (22) $-a - 7$ (23) $-a + 8$ (24) $+a + 8$	

133		134	135
(1) $-x - 1$	(9) $+a - 1$	Ex. (1) $x + 6$	(1) $\boxed{3}a + \boxed{4}b$
(2) $-x + 3$	(10) $-a + 2$	(2) $x - 2$	(2) $-5a + 4b$
(3) $+x - 4$	(11) $+a + 4$	(3) $3x - 2$	(3) $3a - 6b$
(4) $+x + 6$	(12) $-a - 5$	(4) $6x - 8$	(4) $-5a - 4b$
(5) $+x - 4$	(13) $+a - 3$	(5) $6x - 2$	(5) $-5a + 6b$
(6) $+x + 5$	(14) $+a + 5$	(6) $2x - 2$	(6) $3a + 6b$
(7) $-x - 7$	(15) $-a + 6$	(7) $2a - 9$	(7) $2x^2 + 5x + 5$
(8) $-x + 8$	(16) $-a + 8$	(8) $4a + 1$	(8) $5x^2 + x - 5$
			(9) $-x^2 - 5x + 5$
			(10) $-3x^2 - x - 5$
133		134	135
(17) $\boxed{2}x + \boxed{4}$		(9) $x + 4$	(11) $6a - 12$
(18) $2x - 4$		(10) $3x + 2$	(12) $-4a - 8$
(19) $5x - 5$		(11) $2x - 5$	(13) $-4a - 12$
(20) $5x + 5$		(12) $4x + 1$	(14) $6a - 8$
(21) $2a + 3$		(13) $2a - 9$	(15) $-a - b + 3c$
(22) $4x - 4$		(14) $6a - 1$	(16) $3a - 3b + 3c$
(23) $4x + 4$		(15) $8a + 14$	(17) $2a + b + 3c$
(24) $2x + 5$		(16) $8a$	(18) $-5b + 3c$
(25) $2x - 5$		(17) -16	(19) $-a - 2b + 6c$
(26) $7a - 3$		(18) 0	(20) $3a - 2b$

G136–140 (3–5 min)

136	137
(1) $6a + 4b$	(1) $-3a + 6b + 4c$
(2) $5a + 5b$	(2) $a - 4c$
(3) $4a - 11b$	(3) $7x + 6y - 3$
(4) $3a - 2b$	(4) $8x - 3y - 9z$
(5) $2a + 5b$	(5) $5x + y + z$
(6) $a - 4b$	(6) $3a - 2b - 9c$
(7) $-a - 7b$	(7) $-4a - 10b + 10c$
(8) $-2a$	(8) $8a + 7b + 2c$
(9) $16a + 2b$	
136	137
(10) $-5a - 4b$	(9) $-3x + 4y + 12$
(11) $-2a - b$	(10) $-6x - 5y + 8$
(12) $4a - 3$	(11) $-4x + 5y + 9$
(13) $-a - 2b - 3c$	(12) $-a - 2b + 2c$
(14) $2a - 8b + 2c$	(13) $-3a + 5b + 2c$
(15) $-14y + 4z$	(14) $\frac{1}{3}a - 7b + c$
(16) $8x - 2z$	(15) $20x - 8y + \frac{7}{20}$
(17) $-a + b - 5c$	
(18) $3a - 5b + 5c$	

138	139	140
(1) $4a - \frac{1}{2}b$	(1) $4x^2 - 5x - 3$	(1) $5a - 5b$
(2) $2a - 6b + 3$	(2) $2x^2 + x - 5$	(2) $-a + b$
(3) $7a - 3$	(3) $4x^2 - 2$	(3) $2a - 3b$
(4) $5a + 2b - 5c$	(4) $-22x^2 + 12x - 6$	(4) $-3a + 4b$
(5) $2x + 8y - 1$	(5) $15x^3 - 22x^2 + 12x - 6$	(5) $5x - 6y$
(6) $x - \frac{3}{2}y$	(6) $-4x - 2y$	(6) $\frac{3}{4}x - \frac{8}{15}y$
(7) $5x - 9z$	(7) $-2x - 6y$	(7) $-\frac{2}{3}x - \frac{5}{4}y$
(8) $5a^2 - 9b^2$	(8) $x - 5$	
138	139	140
(9) $-x + 4$	(9) $-a + 2$	(8) $5a - 3b - 4c$
(10) $6x - 3y$	(10) $8x - 10y$	(9) $2a + b - 3$
(11) $7x^2 - x - 5$	(11) $\frac{5}{2}x - \frac{11}{12}y$	(10) $-3x^2 + 4x - 9$
(12) $5a - 3b + 12c$	(12) $-\frac{1}{2}x + \frac{19}{12}y$	(11) $4x^2 - 6x$
(13) $6z$	(13) $-\frac{1}{2}x - \frac{7}{2}y$	(12) $2x + 6y$
(14) $\frac{5}{2}a - 4b$	(14) $\frac{1}{6}a - \frac{1}{12}b - \frac{1}{20}c$	(13) $-4x + y$
(15) $-a - \frac{5}{4}b - \frac{7}{2}c$		(14) $-3y$

G141-145 (4-6 min)

141		142	
Ex.		Ex.	
(1) $\boxed{6}x - \boxed{2}$	(4) $-4y - 8$	(1) $2x - 3$	(4) $2a + 5b$
(2) $5a - 6b$	(5) $-x - 2y - 8$	(2) $2x + 4y + 3$	(5) $-a - 4b - 5c$
(3) $-x + 2y + 2$	(6) $\boxed{1}$	(3) $-5a - 7b + 13$	(6) $2x + 6y - 2z$
141		142	
Ex.			
(7) -3	(11) $\boxed{4}x + \boxed{8}$	(7) $7x - 12y + 5$	(11) $a - 2b - 4$
(8) -2	(12) $7a + 5b$	(8) $2x + y$	(12) $-x - 7y + 5z$
(9) -7	(13) $-4b - 8$	(9) $6a - 5b - 8$	(13) $4a - 2b - 1$
(10) 9	(14) $3x + 4y - 4$	(10) $-4a + b + 5$	(14) $-4a - 3b + 3c$

143	144	145
Ex. (1) $6a + 15b$ (2) $8a + 4b$ (3) $10a - 20b$ (4) $2a - 6b$ (5) $-12a + 3b$ (6) $-3a + 9b$ (7) $-4a - 4b$ (8) $2x - 12$ (9) $-\frac{4}{9}x - 1$	(1) $8a - 2b$ (2) $-8a + 2b$ (3) $3a - 12b$ (4) $-12a - 15b$ (5) $-12x + 20y$ (6) $\frac{1}{2}x - \frac{1}{8}$ (7) $-2x - \frac{1}{4}$ (8) $-\frac{1}{2}x + \frac{1}{9}$	Ex. (1) $-7a + 8b$ (2) $-a - 12b$ (3) $11a - 2b$ (4) $10a + 10b$ (5) $-x + 8y$ (6) $3x + 6y$ (7) $-5x + 6y$ (8) $-5x + 6y$
143	144	145
Ex. (10) $-6a + 15b$ (11) $-5a + 15$ (12) $-2x + 6y$ (13) $-4x - 4y$ (14) $10x - 35$ (15) $-2a + 1$ (16) $-x - 2$ (17) $-2a - \frac{2}{3}$ (18) $9a + 10$	(9) $-8a - 10b$ (10) $3a + 6b$ (11) $-6x + 3$ (12) $-12x + 8$ (13) $\frac{1}{12}x - \frac{1}{2}$ (14) $-\frac{1}{12}x - \frac{1}{8}$ (15) $5 - 5x$ (16) $-12 + 6x$	(9) $-5a - 10b$ (10) $11a - 10b$ (11) $-5x + 2$ (12) $-5x - 2$ (13) $x + 2$ (14) $x + 2$ (15) $11x - 7$ (16) $7x + 7$

G146–150 (4–6 min)

*148a (5) Problem where distribution appears from the second brackets

146	147	148
(1) $6x - 8$	(1) $4x - 10$	(1) $4a + 12b$
(2) $11x + 7$	(2) $4x + 10$	(2) $4a - 2b$
(3) $8x - 11$	(3) $-x - 1$	(3) $-9a + 3b$
(4) $3x - 5$	(4) $3x - 34$	(4) $a - \frac{1}{4}$
(5) $8x - 34$	(5) 0	(5)* $-2x + \boxed{14}y$
(6) $8x - 13$	(6) $-24x + 16$	(6) $-3a + 9b$
(7) $5x - 3$	(7) $-4x - 38$	(7) $-12a + 24b$
(8) $8x + 18$	(8) $-11x - 31$	
146	147	148
(9) $3x - 4$	(9) $7x - 7$	(8) $3x - 3$
(10) $2x + 9$	(10) $5x + 19y$	(9) $-2x - 7$
(11) $2x + 30$	(11) $-17x - 11y$	(10) $-6x + 18$
(12) $x - 18$	(12) $-17x + 11y$	(11) $-5x - 6$
(13) -7	(13) $-x + 5$	(12) $-\frac{1}{2}a + \frac{4}{3}b$
(14) $2x + 3$	(14) $-2x$	(13) $-\frac{5}{4}x + \frac{7}{4}y$
(15) $-2x - 5$	(15) $a - \frac{1}{3}b$	(14) $-4x + 2$
(16) $x + 9$	(16) $\frac{2}{3}a - \frac{1}{3}b$	

149	150
(1) $3a + 12b$	(1) $-12a + 18$
(2) $6a - 10b + 2$	(2) $2x + 4y$
(3) $-15x + 5y - 10z$	(3) $x + 6$
(4) $-3x + 2y + 1$	(4) $-2a + 10b$
(5) $-x + 5y + \frac{3}{2}$	(5) $8x - 30$
(6) $-2x + 2$	(6) $2x - 4$
(7) $8x + 15$	(7) $-2x - 8$
149	150
(8) $10x$	(8) $2x - 15$
(9) $10x$	(9) $-20x + 20$
(10) $-x + 18$	(10) $6a + 20$
(11) $-6x + 9$	(11) $-5x + 14$
(12) $7x - 3$	(12) $-\frac{1}{2}a - \frac{2}{3}b$
(13) $x + 4$	(13) $\frac{3}{10}x - \frac{14}{15}$
(14) $\frac{11}{12}x - \frac{1}{6}$	(14) $x - 1$

G151-155 (4-6 min)

[In G151-155, check if students write the appropriate intermediate steps, if they make many mistakes.]

151	152	153	
Ex. (1) $\frac{7x-1}{6}$ (2) $\frac{14x+2}{15}$ (3) $\frac{7x-8}{6}$ (4) $\frac{7x-9}{12}$	Ex. (1) $\frac{x+1}{4}$ (2) $\frac{6x-11}{12}$ (3) $\frac{4x+5}{12}$ (4) $\frac{10x-6}{9}$	(1) $\frac{7x+25}{12}$ (2) $\frac{x-18}{10}$ (3) $\frac{6x+1}{6}$ (4) $\frac{7a+3b}{8}$ (5) $\frac{-3a-8b}{18}$	Alternative Answer $\left[-\frac{3a+8b}{18} \right]$
151	152	153	
(5) $\frac{7x+4}{4}$ (6) $\frac{29x-36}{12}$ (7) $\frac{14x-19}{12}$ (8) $\frac{9x-13}{6}$ (9) $\frac{8x-5}{8}$	(5) $\frac{3x+y}{4}$ (6) $\frac{2x-16}{15}$ (7) $\frac{3x+7y}{6}$ (8) $\frac{4x-17}{12}$ (9) $\frac{4x+7y}{10}$	(6) $\frac{-4x-7}{6}$ (7) $\frac{3a+5b}{6}$ (8) $\frac{3a-17b}{12}$ (9) $\frac{5}{24}$ (10) $\frac{5x}{24}$	$\left[-\frac{4x+7}{6} \right]$

154		155	
(1) $\frac{-x-y}{6}$	$\left[-\frac{x+y}{6} \right]$	Ex. (1) $\frac{x+3}{6}$	
(2) $\frac{-x-9y}{12}$	$\left[-\frac{x+9y}{12} \right]$	(2) $\frac{-x+9}{12}$	$\left[-\frac{x-9}{12} \right]$
(3) $\frac{4a+5b}{6}$		(3) $\frac{-10x-1}{24}$	$\left[-\frac{10x+1}{24} \right]$
(4) $\frac{-3a+11b}{30}$	$\left[-\frac{3a-11b}{30} \right]$	(4) $\frac{-7x+6}{10}$	$\left[-\frac{7x-6}{10} \right]$
(5) $\frac{8x-7y}{12}$			
154		155	
(6) $\frac{-11x+1}{12}$	$\left[-\frac{11x-1}{12} \right]$	(5) $\frac{23x+1}{12}$	
(7) $\frac{-6x+3}{8}$	$\left[-\frac{6x-3}{8} \right]$	(6) $\frac{-5x-9}{6}$	$\left[-\frac{5x+9}{6} \right]$
(8) $\frac{a-12b}{10}$		(7) $\frac{5x-4}{6}$	
(9) $\frac{2a-3b}{12}$		(8) $\frac{30x+37}{24}$	
(10) $\frac{-4x-y}{24}$	$\left[-\frac{4x+y}{24} \right]$	(9) $\frac{-19x+18}{24}$	$\left[-\frac{19x-18}{24} \right]$

G156-160 (4-6 min)

156	157	158
Ex. (1) $\frac{x-2}{3}$ (2) $\frac{2x+1}{3}$ (3) $\frac{2x-3}{4}$ (4) $\frac{2x-9}{9}$	(1) $\frac{9x+13}{24}$ (2) $\frac{-18x+13}{24}$ Alternative Answer $\left[-\frac{18x-13}{24} \right]$ (3) $\frac{-7x+8y}{12}$ Alternative Answer $\left[-\frac{7x-8y}{12} \right]$ (4) $\frac{16x-11y}{18}$ (5) $\frac{x-5y}{4}$	Ex. (1) $7x-13$ (2) $11x-25$ (3) $4x-5$ (4) $-x+4$ (5) 17
156	157	158
(5) $\frac{x-2}{2}$ (6) $\frac{x-1}{2}$ (7) $\frac{x+3}{2}$ (8) $\frac{x-9}{3}$ (9) $\frac{x}{4}$ (10) $\frac{2x-5}{6}$	(6) $\frac{-2x-3}{9}$ Alternative Answer $\left[-\frac{2x+3}{9} \right]$ (7) $\frac{x-1}{3}$ (8) $\frac{-9x+1}{30}$ Alternative Answer $\left[-\frac{9x-1}{30} \right]$ (9) $\frac{x-y}{3}$ (10) $\frac{-x+5}{3}$ Alternative Answer $\left[-\frac{x-5}{3} \right]$	(6) $\boxed{3}$ $11x+5$ (7) $7x+16$ (8) $x-17y$ (9) $13x-16y$ (10) $-2x-15y$

159		160	
(1)	$\frac{12x-11}{6}$	(1)	$\frac{12x-13}{6}$
(2)	$\frac{-3a-13b}{12} \left[-\frac{3a+13b}{12} \right]$	(2)	$\frac{9x+2}{6}$
(3)	$-\frac{2}{3}$	(3)	$\frac{-x+9}{12} \left[-\frac{x-9}{12} \right]$
(4)	$x-20$	(4)	$\frac{-7x+10y}{9} \left[-\frac{7x-10y}{9} \right]$
(5)	$5a-11$	(5)	$2x-40$
159		160	
(6)	$\frac{7a-4b}{15}$	(6)	$\frac{x-1}{2}$
(7)	$\frac{14x-9}{24}$	(7)	$\frac{-2x+3y}{15} \left[-\frac{2x-3y}{15} \right]$
(8)	$\frac{-2x+3}{9} \left[-\frac{2x-3}{9} \right]$	(8)	$\frac{5x-9y}{24}$
(9)	$-7x$	(9)	$10x-22$
(10)	$7a-8b$	(10)	$\frac{1}{4}x - \frac{1}{9}y + \frac{3}{2}$

G161-165 (3-5 min)

161		162		163	
(1) 2	(7) -1	(1) -2	(7) -5	Ex.	(1) 2 (3) -3
(2) -2	(8) -8	(2) $\frac{5}{3}$	(8) $\frac{2}{3}$		
(3) -1	(9) -16	(3) $\frac{3}{5}$	(9) $\frac{3}{2}$	(2) -3	(4) 3
(4) -3	(10) -3	(4) $\frac{4}{3}$	(10) $-\frac{2}{3}$		
(5) -2	(11) -2	(5) $-\frac{3}{4}$	(11) $\frac{3}{8}$		
(6) 9	(12) 16	(6) 0	(12) 0		
161		162		163	
(13) 3	(19) $\frac{3}{5}$	(13) 3	(18) $\frac{5}{3}$	Ex.	(5) 9 (7) -4
(14) -4	(20) $-\frac{2}{3}$	(14) 6	(19) $-\frac{5}{3}$		
(15) 2	(21) $-\frac{5}{7}$	(15) -6	(20) $\frac{3}{4}$	(6) -3	(8) 2
(16) -3	(22) $-\frac{5}{3}$	(16) -3	(21) $-\frac{7}{4}$		
(17) 3	(23) $\frac{7}{2}$	(17) 3	(22) $-\frac{3}{4}$		
(18) 8	(24) $\frac{3}{4}$				

164		165	
<div>Ex.</div> <div>(1) $x = -2$</div> <div>(Verification)</div> <div>$(-2) \quad -11$</div> <div>$(-2) \quad -11$</div>		<div><div>(1) $x = 3$</div><div>(Verification)</div><div>LHS = 17</div><div>RHS = 17</div></div> <div><div>(2) $x = 2$</div><div>(Verification)</div><div>LHS = -2</div><div>RHS = -2</div></div>	
		<div><div>(3) $x = -2$</div><div>(Verification)</div><div>$(-2) \quad \boxed{6}$</div><div>$\boxed{6}$</div></div> <div><div>(4) $x = 2$</div><div>(Verification)</div><div>LHS = -6</div><div>RHS = -6</div></div>	
164		165	
<div><div>(2) $x = -2$</div><div>(Verification)</div><div>$(-2) \quad -1$</div><div>$(-2) \quad -1$</div></div> <div><div>(3) $x = 3$</div><div>(Verification)</div><div>LHS = 1</div><div>RHS = 1</div></div>		<div><div>(4) $x = -2$</div><div>(Verification)</div><div>LHS = 11</div><div>RHS = 11</div></div> <div><div>(5) $x = 6$</div><div>(Verification)</div><div>LHS = -17</div><div>RHS = -17</div></div>	
		<div><div>(5) $x = -4$</div><div>(Verification)</div><div>$(-4) \quad \boxed{-8}$</div><div>RHS = -8</div></div> <div><div>(6) $x = 3$</div><div>(Verification)</div><div>LHS = 9</div><div>RHS = 9</div></div>	
		<div><div>(7) $x = 1$</div><div>(Verification)</div><div>LHS = 8</div><div>RHS = 8</div></div> <div><div>(8) $x = -2$</div><div>(Verification)</div><div>LHS = 10</div><div>RHS = 10</div></div>	

G166–170 (3–5 min)

166		167	
<p>(1) $x = -6$</p> <p>(Verification)</p> <p>LHS = -4</p> <p>RHS = -4</p>	<p>(3) $x = -1$</p> <p>(Verification)</p> <p>LHS = -7</p> <p>RHS = -7</p>	<p>1.</p> <p>(1) $x = 1$</p> <p>(Verification)</p> <p>LHS = -1</p> <p>RHS = -1</p>	<p>(3) $x = -3$</p> <p>(Verification)</p> <p>LHS = 8</p> <p>RHS = 8</p>
<p>(2) $x = -3$</p> <p>(Verification)</p> <p>LHS = 12</p> <p>RHS = 12</p>	<p>(4) $x = 1$</p> <p>(Verification)</p> <p>LHS = 9</p> <p>RHS = 9</p>	<p>(2) $x = \frac{2}{3}$</p> <p>(Verification)</p> <p>LHS = 2</p> <p>RHS = 2</p>	<p>(4) $x = -10$</p> <p>(Verification)</p> <p>LHS = 31</p> <p>RHS = 31</p>
166		167	
<p>(5) $\boxed{4}$</p> <p>$\boxed{1}$</p> <p>$x = \frac{\boxed{1}}{\boxed{2}}$</p> <p>(Verification)</p> <p>LHS = 5</p> <p>RHS = 5</p>	<p>(7) $x = -1$</p> <p>(Verification)</p> <p>LHS = -1</p> <p>RHS = -1</p>	<p>2.</p> <p>(1) $x = \frac{1}{2}$</p> <p>(2) $x = \frac{1}{3}$</p> <p>(3) $x = -\frac{1}{4}$</p>	<p>(4) $x = 1$</p> <p>(5) $x = 2$</p> <p>(6) $x = \frac{6}{5}$</p>
<p>(6) $x = 1$</p> <p>(Verification)</p> <p>LHS = -4</p> <p>RHS = -4</p>	<p>(8) $x = \frac{1}{4}$</p> <p>(Verification)</p> <p>LHS = 2</p> <p>RHS = 2</p>		

168		169	170
(1) $x = 2$	(4) $x = -1$	(1) $x = -3$	(1) $x = 3$
		(2) $x = -5$	(2) $x = 1$
		(3) $x = -\frac{4}{7}$	(3) $x = -\frac{2}{3}$
(2) $x = -4$	(5) $x = -2$	(4) $x = -4$	(4) $x = -13$
		(5) $x = -11$	(5) $x = -\frac{5}{3}$
(3) $x = -\frac{9}{8}$	(6) $x = \frac{2}{5}$	(6) $x = -\frac{4}{3}$	(6) $x = 4$
168		169	170
(7) $x = 1$	(10) $x = 2$	(7) $x = 14$	(7) $x = -1$
		(8) $x = 3$	(8) $x = 1$
		(9) $x = \frac{1}{2}$	(9) $x = \frac{7}{2}$
(8) $x = -\frac{3}{2}$	(11) $x = \frac{1}{6}$	(10) $x = -2$	(10) $x = 1$
		(11) $x = 2$	(11) $x = 2$
(9) $x = -2$	(12) $x = 2$	(12) $x = \frac{9}{4}$	(12) $x = \frac{7}{4}$

G171-175 (4-6 min)

171		172	
<div>Ex.</div> <div>1.</div> <div>(1) $x = 4$</div> <div>(Verification)</div> <div>LHS = $\frac{10}{3}$</div> <div>RHS = $\frac{10}{3}$</div>		<div>Ex.</div> <div>(2) $\frac{1}{2}$</div>	
<div>(2) $x = \frac{2}{3}$</div> <div>(Verification)</div> <div>LHS = $\frac{3}{4}$</div> <div>RHS = $\frac{3}{4}$</div>		<div>(1) $\frac{9}{4}$</div> <div>(3) $-\frac{1}{2}$</div>	
171		172	
<div>2.</div> <div>(1) $\frac{7}{8}$</div> <div>(4) $\frac{8}{3}$</div>		<div>(4) -6</div> <div>(7) 6</div>	
<div>(2) $-\frac{14}{15}$</div> <div>(5) $-\frac{15}{2}$</div>		<div>(5) 6</div> <div>(8) 18</div>	
<div>(3) $-\frac{6}{5}$</div> <div>(6) $\frac{3}{14}$</div>		<div>(6) 30</div> <div>(9) 6</div>	

173		174		175	
(1)	$\frac{8}{15}$	(4)	$-\frac{6}{7}$	(1)	$-\frac{5}{4}$
(2)	$-\frac{3}{5}$	(5)	18	(2)	5
(3)	$-\frac{9}{5}$	(6)	$\frac{18}{7}$	(3)	6
(1)	$-\frac{2}{9}$	(4)	-18	(4)	$-\frac{1}{2}$
(2)	-36	(5)	-10	(5)	$-\frac{1}{2}$
(3)	$\frac{15}{2}$	(6)	-15	(6)	$-\frac{2}{5}$
173		174		175	
(7)	$\frac{8}{15}$	(7)	6	(7)	$\frac{1}{3}$
(8)	8	(8)	$\frac{3}{2}$	(8)	6
(9)	$\frac{5}{12}$	(9)	$\frac{2}{3}$	(9)	-3
(10)	$-\frac{15}{2}$	(10)	0	(10)	6
(11)	$-\frac{1}{2}$	(11)	$\frac{15}{2}$	(11)	6
(12)	0	(12)	$\frac{2}{3}$	(12)	-1

G176–180 (4–6 min)

176	177	178
<div>Ex.</div> <div>1.</div> <div>(1) $x = \frac{5}{2}$</div> <div>(Verification)</div> <div>LHS = - 40</div> <div>RHS = - 40</div> <div>(2) $x = 1$</div> <div>(Verification)</div> <div>LHS = - 12</div> <div>RHS = - 12</div>	<div>(1) 4 (4) 0</div> <div>(2) 2 (5) 6</div> <div>(3) - 1 (6) - 2</div>	<div>(1) $-\frac{3}{2}$ (4) 0</div> <div>(2) - 4 (5) 3</div> <div>(3) - 3 (6) 3</div>
176	177	178
<div>2.</div> <div>(1) $\frac{9}{2}$ (5) 2</div> <div>(2) - 1 (6) 7</div> <div>(3) 1 (7) 1</div> <div>(4) 6 (8) - 8</div>	<div>(7) - 1 (10) $\frac{3}{4}$</div> <div>(8) - 2 (11) 1</div> <div>(9) 0 (12) 8</div>	<div>(7) - 2 (10) - 4</div> <div>(8) 3 (11) $-\frac{4}{3}$</div> <div>(9) 2 (12) 5</div>

179		180	
(1) 5	(5) 4	(1) 12	(5) 3
(2) 11	(6) -1	(2) -3	(6) -10
(3) 18	(7) -2	(3) -8	(7) 6
(4) 3	(8) 5	(4) 7	(8) $-\frac{1}{3}$
179		180	
(9) 1	(12) 0	(9) -18	(12) 2
(10) 0	(13) -3	(10) -10	(13) -1
(11) 1	(14) $-\frac{2}{3}$	(11) -3	(14) -2

G181-185 (4-6 min)

181		182	
<div>Ex.</div> <div>1.</div> <div>(1) <div>12</div></div> <div><div>12</div> <div>12</div></div> <div>$x = 18$</div>		<div>(1) <div>10</div> <div>10</div></div> <div>10</div> <div>(2) 18</div> <div>(3) - 24</div> <div>(4) 60</div>	
<div>(Verification)</div> <div>LHS = 5</div> <div>RHS = 5</div>			
181		182	
<div>2.</div> <div>(1) <div>24</div> <div>24</div></div> <div>$x = \frac{20}{9}$</div> <div>(2) $x = 30$</div>		<div>(5) <div>12</div> <div>12</div></div> <div>- 2</div> <div>(6) 4</div> <div>(7) - 4</div> <div>(8) 2</div>	
<div>(3) $x = - 19$</div> <div>(4) $x = - 7$</div>			

183		184		185	
(1) $\frac{45}{4}$	(3) $\frac{9}{4}$	Ex.	(2) -1	(1) 21	(3) 4
(2) -24	(4) $\frac{15}{4}$	(1) 13	(3) 4	(2) 1	(4) 5
183		184		185	
(5) 6	(7) -45	(4) -9	(7) $-\frac{7}{2}$	(5) 7	(8) 4
(6) 3	(8) $\frac{8}{15}$	(5) -2	(8) 2	(6) -6	(9) -16
		(6) $\frac{1}{2}$	(9) -1	(7) 4	(10) $-\frac{1}{2}$

G186–190 (4–6 min)

186		187		188	
Ex.	(2) 1	Ex.	(2) $\frac{3}{2}$	(1) 12	(3) 6
(1) $\frac{5}{2}$	(3) 1	(1) $\frac{17}{2}$	(3) $\frac{1}{2}$	(2) -3	(4) $-\frac{7}{2}$
186		187		188	
(4) 4	(7) $\frac{1}{2}$	(4) 20	(7) -9	(5) 5	(8) 1
(5) $\frac{3}{2}$	(8) 2	(5) -1	(8) $-\frac{7}{2}$	(6) -6	(9) -6
(6) 5	(9) 4	(6) $-\frac{3}{2}$	(9) $-\frac{5}{2}$	(7) 2	(10) 4

189		190	
(1) - 3	(3) 10	(1) 16	(3) - 8
(2) - 5	(4) 2	(2) - 16	(4) 2
189		190	
(5) $\frac{21}{2}$	(8) 0	(5) 2	(8) 3
(6) 4	(9) 1	(6) $\frac{1}{2}$	(9) 9
(7) 7	(10) 8	(7) 2	(10) 2

G191-195 (4-6 min)

191		192		193	
Ex.	(2) 0	Ex.	(2) $\frac{3}{8}$	(1) 3	(3) 10
(1) -7	(3) 4	(1) 18 - $\frac{1}{3}$	(3) - $\frac{1}{6}$	(2) 4	(4) 7
191		192		193	
(4) 5	(6) 1	(4) $\frac{7}{4}$	(6) - $\frac{1}{2}$	(5) 3	(7) 9
(5) 7	(7) 7	(5) 4	(7) -1	(6) 7	(8) $\frac{3}{8}$

194		195	
Ex.	(2) 6	(1) $\frac{5}{2}$	(3) 10
(1) 6	(3) - 8	(2) - 6	(4) 12
194		195	
(4) 3	(7) 4	(5) - 1	(7) - 6
(5) - 4	(8) - 5	(6) - 1	(8) 3
(6) 3	(9) 9		

G196–200 (4–6 min)

196		197		198	
(1) $-\frac{5}{4}$	(3) -21	1. (1) $y=6$	(3) $y=8$	1. (1) $y=\frac{4}{3}$	(3) $y=7$
(2) -3	(4) -10	(2) $y=\frac{9}{2}$	(4) $y=\frac{1}{8}$	(2) $y=\frac{2}{3}$	(4) $y=\frac{3}{2}$
196		197		198	
(5) 3	(7) 3	2. (1) $a=16$	(3) $a=-16$	2. (1) $t=-5$	(3) $t=-9$
(6) 5	(8) -14	(2) $a=16$	(4) $a=-8$	(2) $t=-5$	(4) $t=1$

199		200	
(1) $x = -\frac{3}{4}$	(3) $y = 2$	(1) $x = \frac{2}{3}$	(4) $x = -\frac{5}{4}$
(2) $x = 18$	(4) $y = -\frac{3}{2}$	(2) $x = \frac{1}{12}$	(5) $x = 6$
		(3) $x = -9$	(6) $x = 4$
199		200	
(5) $\boxed{2} \boxed{4}$ $\boxed{4} \boxed{7}$ $x = \frac{7}{4}$	(7) $x = -6$	(7) $y = -\frac{1}{4}$	(9) $t = -\frac{3}{4}$
(6) $x = 5$	(8) $x = -24$	(8) $y = 3$	(10) $t = 12$